WHAT IS CLAIMED IS:

1. A magnetoresistance effect element comprising:

a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction;

a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

a non-magnetic intermediate layer formed between the magnetization fixed layer and the magnetization free layer,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

the film area of the non-magnetic intermediate layer being smaller than the film area of each of the magnetization fixed layer and the magnetization free layer, and

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer, the non-magnetic intermediate layer and the magnetization free layer in a direction substantially perpendicular thereto.

2. A magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in accordance with an external magnetic field; and

an electrode connected to a part of a principal plane of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction substantially perpendicular to the magnetization fixed layer

and the magnetization free layer, and

the electrode comprising a pillar electrode portion substantially perpendicularly extending from the principal plane of the stacked film, a first feed portion being connected to the pillar electrode portion and extending from the pillar electrode portion substantially in parallel to the principal plane of the stacked film, and a second feed portion being connected to the first feed portion and extending from the first feed portion substantially in parallel to the principal plane.

3. A magnetoresistance effect element as set forth in claim 2, wherein the sectional area of the first feed portion substantially in parallel to the principal plane of the stacked film is greater than the sectional area of the pillar electrode portion, and is smaller than the sectional area of the second feed portion.

4. A magnetoresistance effect element as set forth in claim 2, wherein the shape of a contact surface of the principal plane of the stacked film contacting the pillar electrode portion is substantially a quadrilateral.

5. A magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

two electrodes, each of which is connected to a part of a corresponding one of both principal planes of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction

substantially perpendicular to the magnetization fixed layer and the magnetization free layer, and

each of the two electrodes comprising a pillar electrode portion substantially perpendicularly extending from the corresponding one of the both principal planes of the stacked film, a first feed portion being connected to the pillar electrode portion and extending from the pillar electrode portion substantially in parallel to the both principal planes of the stacked film, and a second feed portion being connected to the first feed portion and extending from the first feed portion substantially in parallel to the both principal planes.

6. A magnetoresistance effect element as set forth in claim 5, wherein the sectional area of the first feed portion substantially in parallel to the both principal planes of the stacked film is greater than the sectional area of the pillar electrode portion, and is smaller than the sectional area of the second feed portion.

7. A magnetoresistance effect element as set forth in claim 5, wherein the shape of a contact surface of each of the both principal planes of the stacked film contacting the pillar electrode portion is substantially a quadrilateral.

8. A magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

an electrode connected to a part of a principal plane of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance

being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction substantially perpendicular to the magnetization fixed layer and the magnetization free layer, and

the electrode comprising a pillar electrode portion substantially perpendicularly extending from the principal plane of the stacked film, and a feed portion extending substantially in parallel to the principal plane of the stacked film,

the pillar electrode portion having two conductive layers in the central portion and outer peripheral portion thereof, and the sense current being caused to flow in the opposite directions to each other in the central portion and the outer peripheral portion.

9. A magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

an electrode connected to a part of a principal plane of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction substantially perpendicular to the magnetization fixed layer and the magnetization free layer, and

the electrode comprising a pillar electrode portion substantially perpendicularly extending from the principal plane of the stacked film, and a feed portion extending substantially in parallel to the principal plane of the stacked film,

the magnetoresistance effect element further comprising a magnetic shield provided around the pillar electrode portion.

10. A magnetic head comprising:

a pair of yokes arranged so as to face each other via a magnetic gap; and

a magnetoresistance effect element magnetically coupled to the pair of yokes,

the pair of yokes having magnetization arranged in a predetermined direction, and

the magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

an electrode connected to a part of a principal plane of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction substantially perpendicular to the magnetization fixed layer and the magnetization free layer, and

the shape of a connecting portion for connecting the principal plane to the electrode having an edge portion inclined in a magnetization rotating direction of the magnetization free layer from a direction perpendicular to the magnetizing direction of the yokes.

11. A magnetic head as set forth in claim 10, wherein the shape of the connecting portion for connecting the principal plane to the electrode is asymmetric with respect to the center of the connecting portion.

12. A magnetic head as set forth in claim 11, wherein the shape of the connecting portion for connecting the principal plane to the electrode is substantially a quadrilateral.

13. A magnetic head comprising:

a pair of yokes arranged so as to face each other via a magnetic gap; and

a magnetoresistance effect element magnetically coupled to the pair of yokes,

the pair of yokes having magnetization arranged in a predetermined direction, and

the magnetoresistance effect element comprising:

a first stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction;

a second stacked film including a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field; and

a non-magnetic intermediate layer provided between the first stacked layer and the second stacked layer,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

the area of a contact portion of a principal plane of the first stacked film contacting the non-magnetic intermediate layer being smaller than the area of the principal plane of the first stacked film, and

the area of a contact portion of a principal plane of the second stacked film contacting the non-magnetic intermediate layer being smaller than the area of the principal plane of the second stacked film,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer, the non-magnetic intermediate layer and the magnetization free layer in a direction substantially perpendicular thereto,

the shape of a connecting portion for connecting the non-magnetic intermediate layer to the principal plane of the first stacked film having an edge portion inclined in a magnetization rotating direction of the magnetization free layer from a direction perpendicular to the magnetizing direction of the yokes.

14. A magnetic head comprising:

a pair of yokes arranged so as to face each other via a magnetic gap; and

a magnetoresistance effect element provided on the pair of yokes and magnetically coupled to the pair of yokes,

the pair of yokes having magnetization arranged in a predetermined direction, and

the magnetoresistance effect element comprising:

a stacked film including a magnetization fixed layer in which the direction of magnetization is substantially fixed to one direction, and a magnetization free layer in which the direction of magnetization varies in response to an external magnetic field;

a top electrode connected to a part of an upper principal plane of the stacked film;

a bottom electrode connected to a lower principal plane of the stacked film,

the magnetoresistance effect element having a resistance varying in response to a relative angle between the direction of magnetization in the magnetization fixed layer and the direction of magnetization in the magnetization free layer,

a sense current detecting the variation of the resistance being applied to the film planes of the magnetization fixed layer and the magnetization free layer via the electrode in a direction substantially perpendicular to the magnetization fixed layer and the magnetization free layer,

the top electrode having a pillar electrode portion substantially perpendicularly extending from the principal plane of the stacked film, and a feed portion extending substantially in parallel to the principal plane of the stacked

film,

the bottom electrode extending in a direction perpendicular to the direction of magnetization of the yokes,

the feed portion of the top electrode being provided so that the sense current flowing through the feed portion is anti-parallel to a sense current flowing through the bottom electrode.

15. A magnetic head as set forth in claim 14, wherein at least one of the top electrode and the bottom electrode has a current constriction region at a position of a gap between the pair of yokes,

the area of the current constriction region being wider than a region of the pillar electrode contacting the stacked layer.

16. A magnetic head having a magnetoresistance effect element as set forth in claim 1.

17. A magnetic head having a magnetoresistance effect element as set forth in claim 2.

18. A magnetic head having a magnetoresistance effect element as set forth in claim 5.

19. A magnetic reproducing system which has a magnetic head as set forth in claim 16 and which is capable of reading magnetic information stored in a magnetic recording medium.

20. A magnetic reproducing system which has a magnetic head as set forth in claim 18 and which is capable of reading magnetic information stored in a magnetic recording medium.